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ABSTRACT

Students must clearly understand that every living thing on earth exists within the context of a system of interlocking dependency. Through the use of audio-visual materials, books, magazines, newspapers, and special television reports, as well as direct interaction with people, places, and things, students begin to develop a cognitive frame of reference to their world. Typically, global education programs focus on natural/social geography, history, economics, government, and sociology. Few attempts are made to fuse topics of study into a logical sequence of inquiry, stressing the interrelationships between natural and social environments and pointing out the conflicts, issues, and situations that confront nature and humankind. Ten sample lesson plans for grades 4 through 12 are included, covering such concepts as pollution, waste disposal, forest degradation, the greenhouse effect, urbanization, and endangered species. Some lessons include maps. It is hoped that these will serve as models that each teacher can use to create learning experiences unique to a particular class, at a particular setting, and in a particular point in time. Appended are various news clippings that deal with the concepts in the lesson plans, a list of selected international organizations, a fact sheet about Global Horizons, and 14 selected references. (JB)

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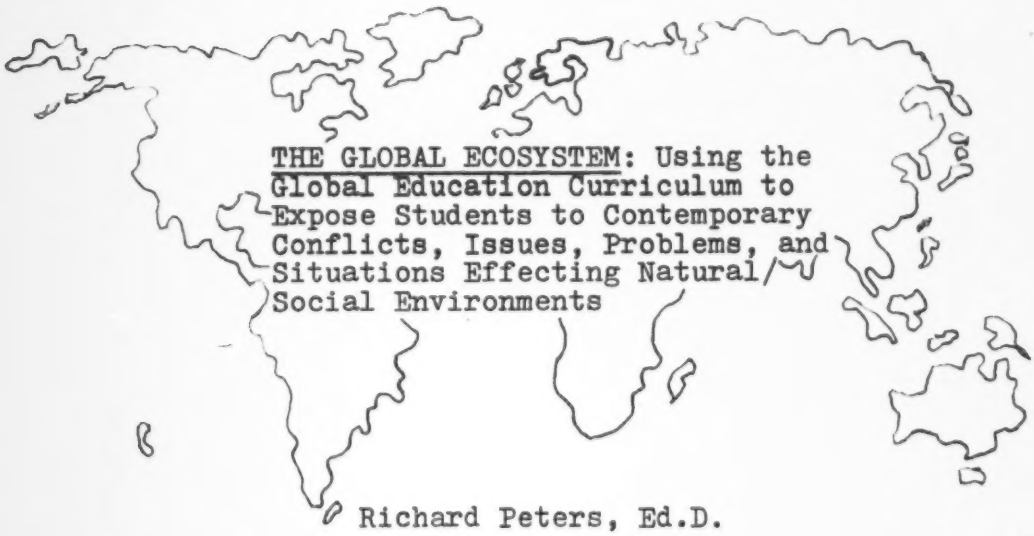
GLOBAL HORIZONS

HUMANS & ENVIRONMENT
LEARNING PROGRAM
(HELP)



THE GLOBAL ECOSYSTEM: Using the Global Education Curriculum to Expose Students to Contemporary Conflicts, Issues, Problems, and Situations Effecting Natural/Social Environments

Richard Peters, Ed.D.

U.S. DEPARTMENT OF EDUCATION
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AUGUST 1989

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ABOUT THE AUTHOR

Richard Peters founded GLOBAL HORIZONS: The Center for Applied ECO/SOCIAL Studies in 1981.

Since that time, Dr. Peters has been involved in K-12 culture studies/global education instructional program development; has been active in the activities of the Environment Liaison Centre (Nairobi, Kenya); has designed the HUMANS/ENVIRONMENT LEARNING PROGRAM (H/ELP); and has been published in several national periodicals.

Dr. Peters is experienced in K-12 social studies education as a classroom teacher; department chairman; district-wide curriculum coordinator; and teacher inservice education director.

He is a member of Delta Tau Kappa, Alpha Kappa Delta, and Phi Delta Kappa as well as the recipient of Fulbright Seminars Abroad grants to India (1982) and the Republic of Korea (1989). Dr. Peters is a member of the TEACHER EDUCATION Committee of the National Council for the Social Studies (1989-1992). He is a past member of the NCSS International Activities Committee.

Presently, Dr. Peters is Assistant Professor of Social Studies Education at The University of Maine at Presque Isle.

Katie and Neil,
the future is yours.

Students must clearly understand that every living thing on Earth; whether to be found in the skies, on terra firma, or beneath the seas, exists within the context of a system of interlocking dependency. Whatever happens to one entity has effect(s) upon all other entities in the system. Everything is connected to everything else in some way!

Through the use of audiovisual materials, books, magazines, newspapers, special reports on television, as well as interacting, directly, with people/places/things ... students begin to develop a cognitive frame-of-reference to the world(s) about them ... whether close-at-hand or far-removed.

Typically, global education programs focus student attention on:

natural/social geography;
history;
economics;
government;
sociology.

Few, if any, attempts are made to fuse topics of study into a logical sequence of inquiry - stressing the interrelationships between natural/social environments.

Within the realm of natural/social environments, students should begin to comprehend conflicts, issues, problems, and situations which confront, if not critically threaten, nature and humankind.

What are some of the conflicts, issues, problems, and situations which threaten the very existence of Earth and its life forms?

ATMOSPHERE	Airborne Pollutants
	Greenhouse Effect
	Nuclear Winter
	Ozonosphere Holes
HUMAN HEALTH	Basel (West Germany)
	Bhopal (India)
	Chernobyl (USSR)
	Three Mile Island (USA)
	Chemicals/Pharmaceuticals
	Food Irradiation
	Nuclear Winter
	Pesticides
	Toxic Waste Disposal
HUMAN POPULATION DENSITY/ DISTRIBUTION/ GROWTH	Carrying Capacity of Earth
	Drought
	Family Planning
	Famine
	Nuclear Winter
	Soil Degradation
	Urbanization

TROPICAL DEFORESTATION	Airborne Pollutants
	Climate
	Farming
	Fires
	Firewood Cutting
	Grazing
	Nuclear Winter
	Pathogens
	Waldsterben (forest death)
WILDLIFE	Endangered Habitats
	Endangered, Vulnerable, and Rare Species
	Nuclear Winter

SAMPLE LESSONS

CONCEPT(S)	Pollution
GOAL(S)/OBJECTIVE(S)	To acquaint students with ... 1) various types of pollution; 2) dangers related to environmental pollution; 3) dangers of pollution re human health.
GRADE RANGE	4 - 12
ACTIVITIES	1) Audiovisual/print materials are used to introduce the topic: pollution. 2) Each student identifies a type of pollution, e.g., air, noise, water, and researches the subject. Reports are developed. 3) Students are taken on field trips/ nature walks to observe pollution situations and the effects upon natural/social environments. 4) Guest speakers discuss pollution types; the immediate/long range effects of pollution; clean-up campaigns/strategies; local-state-national-international programs and statutes. 5) Students interview all parties involved in pollution cases; those

responsible for the pollution, those who are bringing action to cause polluters to cease-and-desist, those who enforce statutes, third parties caught-up in the situation(s).

6) Students write to local/state/national/international agencies and organizations for anti-pollution guidelines, plans-of-action, etc.

7) Students make bulletin board displays.

8) Students conduct independent research. Reports are developed.

9) Students create a hypothetical situation and role play those involved in the real-to-life scenario. This activity can be videotaped for later screening.

10) Students develop a list of vocabulary words/terms/phrases ... and use them correctly in discussions, reports, writings, etc.

11) Students create word search puzzles.

12) Students simulate radio/television newscasts which can be recorded on audio/video tape. Some students research data while others organize data, write news items, operate recording equipment, or present the news.

13) Students write news items for newspaper publication.

14) Students publish a newspaper.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Application of acquired research skills to assigned tasks.

5) Involvement in role playing simulation.

6) Correct usage of selected vocabulary words/terms/phrases.

7) Involvement in newscast simulation.

8) Quizzes/Tests

CONCEPT(S)	Waste Disposal
GOAL(S)/OBJECTIVE(S)	To acquaint students with ... 1) types of waste which must be properly disposed of to protect natural/social environments, e.g., toxic chemicals, nuclear heavy water, sewage; 2) examples of improper waste disposal and dangers to natural/social environments.
GRADE RANGE	6 - 12
ACTIVITIES	1) Audiovisual/print materials are used to introduce the topic: waste disposal. 2) Students research the topic to determine types of waste materials that must be properly disposed of ... in order to protect natural/social environments. Reports are developed. 3) Students take field trips/nature walks to observe examples of proper/improper waste disposal. 4) Guest speakers discuss waste disposal procedures/policies, types of disposal, dangers to natural/social environments, etc.

5) Students conduct independent research. Reports are developed.

6) Students create bulletin board displays.

7) Students attend local/area meetings re waste disposal and/or waste treatment. Reports are developed.

8) Students write to local/state/national/ international agencies and organizations for information re waste disposal policies and programs.

9) Students debate the issue: where should the local community's new sewage treatment plant be located?

10) Students develop a list of vocabulary words/ terms/phrases and use them correctly in discussions, reports, writings, etc.

11) Students create word search puzzles.

12) Students write news items for publication.

13) Students publish a newspaper.

14) Students simulate a radio/television newscast.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Application of acquired research skills to assigned tasks.

5) Involvement in a debate activity.

6) Correct usage of selected vocabulary words/terms/phrases.

7) Involvement in newscast simulation.

8) Quizzes/Tests

CONCEPT(S)	Forest Degradation
GOAL(S)/OBJECTIVE(S)	To acquaint students with ... 1) Waldsterben as it pertains to the forests of Europe; 2) the destruction of global rain forests; 3) clear cutting and select cutting policies; 4) policies re reforestation; 5) the impact of forests upon the quality/quantity of air humans breathe.
GRADE RANGE	4 - 12
ACTIVITIES	1) Audiovisual/print materials are used to introduce the topic: forest degradation. 2) Students take a field trip/nature walk to observe area forests and cutting policies. Reports are developed. 3) Guest speakers discuss reforestation, the economic importance of forests, forests as wildlife habitats, and forests as a valuable natural resource. 4) Students research area land use policies/practices. Reports are developed re policy statements, practices, and meetings attended.

5) Students research the plight of tropical rain forests. How will the destruction of these areas effect the quality of human life - globally? How will wildlife be effected by this destruction? How will this wholesale destruction effect Earth's carrying capacity? Etc.

6) Students develop world maps which depict the location of endangered tropical rain forests. Reports are developed.

7) Students develop reports re the reasons why tropical rain forests are being destroyed.

8) Students develop a list of vocabulary words/ terms/phrases and use them correctly in discussions, reports, writings, etc.

9) Students create word search puzzles.

10) Students create bulletin board displays.

11) Students write news items for publication.

12) Students publish a newspaper.

13) Students simulate a radio/television newscast.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Application of acquired research skills to assigned tasks.

5) Correct usage of selected vocabulary words/ terms/phrases.

6) Involvement in newscast simulation.

7) Quizzes/Tests

Endangered Tropical Rain Forests

CONCEPT(S)	Greenhouse Effect
GOAL(S)/OBJECTIVE(S)	To acquaint students with ... 1) the greenhouse effect; 2) the importance of the ozonosphere to the well-being of life forms on Earth; 3) holes found in the ozonosphere over the polar caps; 4) causes of the ozonosphere holes; 5) global efforts/strategies to prevent further destruction of the ozonosphere.
GRADE RANGE	4 - 12
ACTIVITIES	1) Audiovisual/print materials are used to introduce the topic: greenhouse effect. 2) Students conduct an in-class experiment to determine greenhouse effect phenomena. Diaries are kept and reports are developed. 3) Students are involved in field-based studies re the greenhouse effect in the local community. Reports are developed.

4) Students go on a field trip to a greenhouse. The greenhouse effect re the growth of plants is explained.

5) Guest speakers discuss the topic. They also discuss the threat to the ozonosphere.

6) Students create bulletin board displays.

7) Students design model buildings to demonstrate active/passive solar heating systems. Reports are developed.

8) Students research the effects of a global warming trend on natural/social environments.

9) Students research the ozonosphere and develop reports.

10) Students research the causes of polar holes in the ozonosphere. Reports are developed.

11) Students develop a list of vocabulary words/ terms/phrases and use them correctly in discussions, reports, writings, etc.

12) Students create word search puzzles.

13) Students debate the topic: the outlawing of certain commercial products in aerosol spray cans.

14) Students develop news items for publication.

15) Students publish a newspaper.

16) Students simulate a radio/television newscast.

17) Students attend local/area meetings re the topic. Reports are developed.

18) Students interview manufacturers of aerosol spray products and those who are trying to have these products banned from future sale. Reports are developed.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Application of acquired research skills to assigned tasks.

5) Involvement in debate.

6) Correct usage of selected vocabulary words/terms/phrases in discussions, reports, writings, etc.

7) Involvement in newscast simulation.

8) Quizzes/Tests

CONCEPT(S) Urbanization

GOAL(S)/OBJECTIVE(S) To acquaint students with ...

1) the growth of global urban areas since the beginning of the 20th Century;

2) problems related to rapid urban growth;

3) policies/programs to insure quality lifespace in urban environments;

4) rapid urban growth and effects on natural environments;

5) rapid urban growth and effects on Earth's carrying capacity.

GRADE RANGE 7 - 12

ACTIVITIES

1) Audiovisual/print materials are used to introduce the topic: urbanization.

2) IF located in an urban area, students are taken on a field trip to observe urban sprawl, slums, residential areas, commercial/industrial areas, community service organizations, etc. Reports are developed.

3) Students develop an urban center map - showing each sector and applying the concentric circle theory to their work. Reports are developed.

4) Students create a table top diarama of an urban center. Reports are developed.

5) Students write stories about urban life.

6) Guest speakers discuss pros/cons of urban life, discuss problems of urban sprawl, discuss land use planning, human services, costs of operating an urban center, etc.

7) Students research the phenomena of urban growth in the 20th Century - worldwide. Reports are developed.

8) Students create a timeline depicting the growth/location of global urban centers. Reports are developed.

9) Students create a world map and locate major urban centers - in various countries. Reports are developed.

10) Students conduct independent research in an urban center using graphic media devices, e.g., audio equipment, motion picture cameras, still cameras, videotape equipment. Reports are developed.

11) Students investigate the phenomenon: MEGALOPOLIS. Reports are developed. Maps/diaramas are created.

12) Students create bulletin board displays.

13) Students develop a list of vocabulary words/ terms/phrases and use them correctly in discussions, reports, writings, etc.

Major Urban Areas - 1980

14) Students create word search puzzles.

15) Students write news items for publication.

16) Students publish a newspaper.

17) Students simulate a radio/television newscast.

18) Students create land use maps showing urban/suburban development and harmony with the natural environment. Reports are developed.

19) Students interview architects/developers who create structures in harmony with the surrounding natural environment(s). Reports/visuals are developed.

20) Students research topics such as low income housing, employment opportunities in urban areas, social services, commercial growth in urban areas, government/politics. Reports/visuals are developed. Individuals living in urban areas are interviewed and recorded on audio/video tape.

21) Students attend city council meetings and develop reports.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Application of acquired research skills to assigned tasks.

5) Involvement in newscast simulation.

6) Correct usage of selected vocabulary words/ terms/phrases in discussions, reports, writings, etc.

7) Quizzes/Tests

CONCEPT(S)	Carrying Capacity of Earth
GOAL(S)/OBJECTIVE(S)	To acquaint students with ... 1) the carrying capacity concept; 2) examples of how Earth's carrying capacity is being overburdened; 3) the effects of overburdening Earth's carrying capacity on natural/social environments - worldwide.
GRADE RANGE	7 - 12
ACTIVITIES	1) Audiovisual/print materials are used to introduce the topic: carrying capacity of Earth. 2) Guest speakers discuss the topic. 3) Students research the topic - on a global scale. Reports are developed. 4) Locally, students investigate the impact of human development on Earth's carrying capacity, e.g., water supplies, land use, waste disposal, air/water pollution, destruction of wildlife habitats, stewardship programs. Reports are developed.

5) Students create world maps depicting areas where Earth's carrying capacity is overburdened. Reports are developed.

6) Students create bulletin board displays.

7) Students conduct independent research. Reports are developed.

8) Students write news items for publication.

9) Students publish a newspaper.

10) Students simulate a radio/television newscast.

11) Students develop a list of vocabulary words/terms/phrases and use them correctly in discussions, reports, writings, etc.

12) Students write stories re the carrying capacity of Earth.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in newscast simulation.

4) Independent research.

5) Application of acquired research skills to assigned tasks.

6) Correct usage of selected vocabulary words/terms/phrases.

7) Quizzes/Tests

Areas where the Earth's carrying capacity
is overburdened by social environments

CONCEPT(S)	Endangered Species
GOAL(S)/OBJECTIVE(S)	To acquaint students with ... 1) types of endangered animal/plant species in the global environment; 2) vulnerable animal/plant species in the global environment; 3) types of rare animal/plant species in the global environment.
GRADE RANGE	4 - 12
ACTIVITIES	1) Audiovisual/print materials are used to introduce the topic: endangered species. 2) Students take a field trip to a zoo to observe various types of endangered/vulnerable/rare animals and birds. Reports are developed. 3) Students read stories about endangered species and of efforts being made to save them from extinction. Reports are developed. 4) Students write stories about endangered species and of efforts being made to save them from extinction.

5) Why are some animals/birds being hunted to extinction? Reports are developed.

6) Students create bulletin board displays.

7) Students write news items for publication.

8) Students publish a newspaper.

9) Guest speakers discuss the topic and efforts being made, worldwide, to save endangered/vulnerable/rare species.

10) Students write to state/national/international agencies and organizations for information re stewardship programs. Reports are developed.

11) Students simulate a radio/television newscast.

12) Students create world maps showing what/where animals/birds/plants and forests are endangered. Reports are developed.

13) Students develop a list of vocabulary words/terms/phrases and use them correctly in discussions, reports, writings, etc.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Correct usage of vocabulary words/terms/phrases.

Areas of endangered species

5) Involvement in newscast simulation.

6) Independent research/projects.

7) Quizzes/Tests

CONCEPT(S)	Pesticides
GOAL(S)/OBJECTIVE(S)	To acquaint students with ...

1) pesticides; What are they? What are they used for? How can they be helpful to natural/social environments? How can they be harmful to natural/social environments?

2) current uses of pesticides on a global scale.

GRADE RANGE 7 - 12

ACTIVITIES

1) Audiovisual/print materials are used to introduce the topic: pesticides.

2) What are pesticides used for? Why are some commonly used while others are banned from use? Why are some banned pesticides being used, regularly, in Third World nations? What are some of the ill-effects to natural/social environments from using certain types of pesticides? Reports/ visuals are developed.

3) Guest speakers discuss the topic.

4) Students are taken on field trips to pesticide manufacturing plants/ farms where various pesticides are commonly used.

5) Students conduct independent research. Reports are developed.

6) Students create world maps showing what/where pesticides are commonly used. Reports are developed.

7) Students develop a list of vocabulary words/terms/phrases and use them correctly in discussions, reports, writings, etc.

8) Students create word search puzzles.

9) Students write news items for publication.

10) Students publish a newspaper.

11) Students simulate a radio/television newscast.

12) Students write to pesticides-producing companies, to regulatory agencies, and to anti-pesticides groups for information. Reports are developed.

13) Students create bulletin board displays.

14) Students develop a hypothetical and role play participants in a pesticides/no pesticides real-to-life scenario.

Worldwide pesticides usage.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Independent research.

5) Involvement in newscast simulation.

6) Correct usage of selected vocabulary words/terms/phrases.

7) Involvement in role playing simulation.

8) Quizzes/Tests

CONCEPT(S) Family Planning

GOAL(S)/OBJECTIVE(S) To acquaint students with ...

1) the intent/purpose of family planning;

2) the pros/cons of family planning re religious beliefs, government policies, economic requirements for child rearing;

3) changing human lifestyles and family life;

4) family planning programs sponsored by international organizations;

5) global areas of uncontrolled, exploding human population growth;

6) the ZERO POPULATION concept;

7) circumstances in which large families can be an economic asset or an economic liability.

GRADE RANGE 10 - 12

ACTIVITIES 1) Audiovisual/print materials are used to introduce the topic: family planning.

2) Guest speakers discuss the topic.

3) Students create world maps showing areas of uncontrolled human population growth. Reports are developed.

4) Students conduct independent research.

5) Students visit family planning clinics. Reports are developed.

6) Students investigate the ill-effects of uncontrolled human population growth upon Earth's carrying capacity. Reports are developed.

7) Students investigate international relief/ health organizations. Reports are developed.

8) Students develop a list of vocabulary words/ terms/phrases and use them correctly in discussions, reports, writings, etc.

9) Students create word search puzzles.

10) Students write news items for publication.

11) Students publish a newspaper.

12) Students simulate a radio/television newscast.

13) Students write to the World Health Organization, the International Red Cross, Catholic Relief Services, etc. for information re family planning, food/medical services, etc. Reports are developed.

14) Students create bulletin board displays.

15) Students develop timelines depicting the growth, in numbers, of the human species. Reports are developed.

Areas of excessive/uncontrolled
human population growth.

16) Students adapt Frederick Jackson Turner's SAFETY VALVE THESIS to the distribution/ density of the human species - worldwide. Reports are developed.

17) Students research world history to determine when limited human living space/high human population density/limited food/water supplies/ limited natural resources have been the cause(s) for war. Reports are developed.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Independent research

5) Involvement in newscast simulation.

6) Correct usage of selected vocabulary words/terms/phrases.

7) Involvement in role playing simulation.

8) Quizzes/Tests

CONCEPT(S) — Endangered Habitats

GOAL(S)/OBJECTIVE(S) — To acquaint students with ...

1) human practices which are endangering natural/social habitats on a global scale;

2) human practices which are protecting/preserving natural/social habitats on a global scale.

GRADE RANGE — 4 - 12

ACTIVITIES

1) Audiovisual/print materials are used to introduce the topic: endangered habitats.

2) Guest speakers discuss the topic.

3) Students take a field trip to observe endangered habitats in the community/surrounding area. What has caused the problem(s)? Reports are developed.

4) What is land use planning? What are open areas? Students investigate these and other related topics. Reports/visuals are developed.

5) Students create a world map showing where endangered habitats exist. Reports are developed.

6) Students develop a list of vocabulary

Endangered natural/social
habitats - worldwide.

words/terms/phrases and use them correctly in discussions, reports, writings, etc.

7) Students develop word search puzzles.

8) Students write news items for publication.

9) Students publish a newspaper.

10) Students simulate a radio/television newscast.

11) Students create bulletin board displays.

12) Students write to the Environment Liaison Center, the National Wildlife Federation, the World Wildlife Fund, the Cousteau Society, etc. for information. Reports are developed.

13) Students draw pictures of what endangered habitats look like. They also write original stories.

14) Students make table top diaramas depicting endangered habitats. Reports are developed.

ASSESSMENT

1) Reports/Projects

2) Group Activities/Discussions

3) Involvement in field-based activities.

4) Independent research

5) Involvement in newscast simulation.

6) Correct usage of selected vocabulary words/terms/phrases.

7) Quizzes/Tests

COMMENTS

The beforementioned lessons/activities are ONLY examples of the types of learning activities that elementary/secondary students can be involved in - when studying the global ecosystem. It is left to the imagination of individual teachers to create learning experiences/situations which are, in fact, unique to a particular class, in a particular setting, and at a particular point-in-time.

There are many other topics which can be explored when developing a global education program. For example, when discussing natural/social environments and interlocking dependency ... attention can be paid to:

- infant mortality rates;
- fertility rates among women of differing age groups;
- crop production;
- farming techniques;
- availability of clean water supplies;
- famine;
- drought;
- open spaces for colonization;
- grazing of domesticated livestock;
- fish harvesting in the open seas.

The grade range for each lesson is ONLY a suggestion. Individual teachers can determine the appropriateness of outlined studies for their particular group(s) of students (K-12).

Reference has frequently been made to the nuclear winter concept. A detailed discussion of this concept can be found in World Resources 1986 (See Selected References page ii). The individual classroom teacher must determine the appropriateness of investigating this topic for his/her students.

Going beyond the limited activities of teacher-developed lessons/units, students can pursue their interests in ecological conflicts/issues/problems/situations, on a global scale, by organizing themselves into a global explorers club.

As ECONAUTS, students fuse research/inquiry in the physical sciences and the social sciences (eco/social studies) to heighten their awareness and understanding of the contemporary world ... and to better prepare themselves for the uncertainties of tomorrow.

Functioning as research scientists, ECONAUTS collect and analyze existing data, develop hypotheses, design research strategies, ponder alternative courses-of-action, select an implementation strategy, and act!

Excerpted from International Environment - Development (March 1989) published by the Environment Liaison Centre - International. GLOBAL HORIZONS: The Center for Applied ECO/SOCIAL Studies is an NGO member of ELC - International.

Unep seeks international treaty

Developing countries are genuinely worried about the increasing amounts of hazardous wastes coming from Western industrialised countries, says Dr Mostafa K. Tolba, executive director of the United Nations Environment Programme (UNEP). "The threats to health, the environment and relations between governments are large, and urgent measures are required to deal with them", the UN environment head says.

He cited the recent resolutions passed by the Organisation of African Unity meeting in Addis Ababa last week and the European Parliament May 19. Both groups deplored the growing trend for industrialised country firms to send their toxic wastes into the developing world.

Learning about development: a lesson the rich must heed

DEVELOPMENT is about change throughout the world - not just in the Third World - and we in Britain have things to learn from the developing countries. So said some of the 150 participants at this year's Development Studies Association annual conference in Birmingham last month.

ECOLOGICAL ABUSE CAUSES INDIA'S WORST DROUGHT OF THE CENTURY

By Radha Rajadhyaksha

India is suffering its worst drought in a century, brought about by ecologically ruinous development such as mass destruction of forests, wrong afforestation schemes and over-exploitation of ground-water.

INDIA today is in the grip of a drought which is, by most official estimates, the worst in the century. The statistics are alarming: in fewer than 11 states — Orissa, Gujarat, Punjab, Haryana, Madhya Pradesh, Uttar Pradesh, Rajasthan and parts of Himachal Pradesh, Jammu & Kashmir, Karnataka and Andhra Pradesh — are reeling under the impact.

RUSSIA

CHERNOBYL

Western Governments Downplayed Consequences of Chernobyl Accident

by Stephanie Cooke
Former Managing editor of Nucleonics Week and Nuclear Fuel

Following the Chernobyl nuclear accident, there was a concerted effort by Western governments to limit the damage caused by the disaster to public opinion of nuclear power.

There is an unwritten code of secrecy within the international civilian nuclear industry. It is an international Masonic order of its own, with roots that lie in the industry's birthplace: the top security labs that produced the world's first atom bombs.

The zeal with which the industry shrouds itself in secrecy was abundantly apparent after the accident at Chernobyl

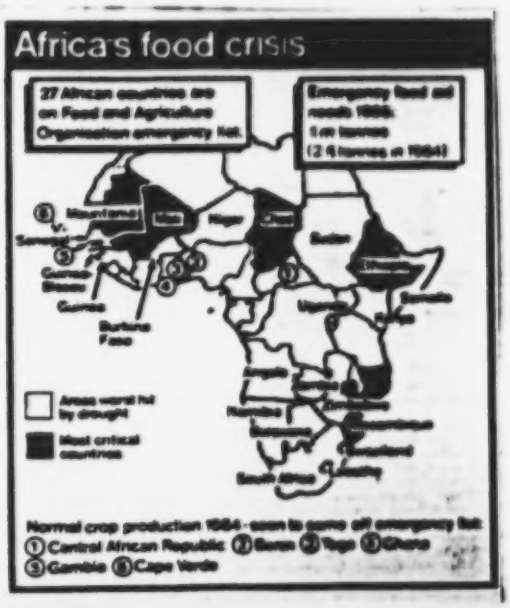
Yet governments and industry have been content to stick by the official explanation of the cause of accident, although independent scientists are sceptical. Governments have dismissed the accident as irrelevant in terms of the need for further safety studies on their own nuclear operations.

Dumping: Cash in a poison bag

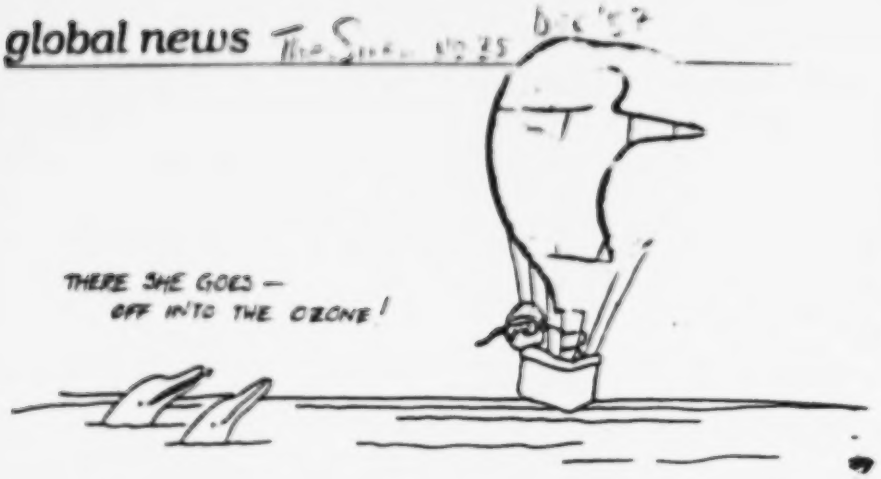
By CLAUDE REGIN,
GENEVA, Sunday

Recent publicised cases of hazardous waste dumping in Africa have highlighted the need for tight international controls on a lucrative but dangerous trade, according to a senior UN official.

More than half a dozen cases in which African countries have been offered or have accepted toxic waste from the industrialised world have recently come to light.


Africa's food crisis
27 African countries are on Food and Agriculture Organisation emergency list.
Emergency food aid needs 1986
1m tonnes
(2.4 tonnes in 1984)
Areas worst hit by drought
Most critical countries
Normal crop production 1984 - seen to come off emergency list:
1 Central African Republic 2 Benin 3 Togo 4 Ghana
5 Gambia 6 Cape Verde

global news



Historic ozone layer agreement

An unprecedented international agreement to protect the ozone layer from man-made chemical destruction was signed 16 September 1987, in Montreal, Canada. The Protocol to Control Ozone Depleting Substances, which is expected to enter into force on 1 January 1989, will freeze the production of chlorofluorocarbons (CFCs) one year later at their 1986 level.

CFCs - which are commonly used as cooling agents in refrigerators and air conditioners, to propel aerosols (spray cans), clean computer components and in the manufacture of plastic foams - deplete the ozone layers. Ozone filters out excessive amounts of ultraviolet light which can and does cause skin cancer and eye damage, and harm plants and animal life.

The landmark Montreal agreement also calls for reducing production and consumption of CFCs by 50 per cent by mid-1998. It allows limited production increases to meet very specific situations. This reduction would be achieved in two stages: a 20 per cent cut by mid 1993, and a further 30 per cent reduction by mid-1998.

The new Protocol also asserts that "special provision is required to meet the needs of developing countries for these substances (CFCs)." It was agreed that developing countries would have ten years to comply with the treaty's provisions concerning freezes and reductions. They could increase their consumption of CFCs during this period to 0.3 kilograms per capita. Concern that countries not signing the Protocol would take commercial advantage of it was satisfied by two paragraphs in the accord. One bans the import of the CFCs from any state not complying with the agreement within one year of its entry into force. The other forbids, under specific conditions, countries that have ratified the Protocol to export these substances to a non-party state, as from 1 January 1993.

Of the 63 countries and the European Economic Community present at the September Montreal conference, 24 countries and the EEC signed the Montreal Protocol on the spot. Others are expected to follow suit soon.

"This is the first truly global treaty that offers protection to every single human being on this planet," said Dr. M.K. Tolba, UNEP's Executive Director. "UNEP considers this accord unique because it seeks to anticipate and manage a world problem before it becomes an irreversible crisis."

Swiss Company Dumps Dangerous Pesticide in Third World

by Yap Bing Nyi

Food Irradiation: Contaminating our Food

by Richard Piccioni

Food irradiation has long been promoted by the nuclear industry as an effective and safe means of preserving food at minimum risk to the public. In fact, irradiation not only depletes the nutritional value of food but it also masks the bacterial contamination of rotting food. Moreover, irradiation exposes the consumer to a whole new range of carcinogens. Indeed, food irradiation should be seen for what it is: an unscrupulous attempt to find a commercial use for nuclear wastes.

Secret Documents Reveal Nuclear Accidents Worldwide

reported by Gar Smith with Hans Hollitscher

There are 397 nuclear reactors in operation worldwide. How well have they performed? According to the West German weekly *Der Spiegel*, near-Chernobyls have occurred on almost every continent. *Der Spiegel* recently published 48 of over 250 secret nuclear reactor accident reports compiled by the International Atomic Energy Agency (IAEA).

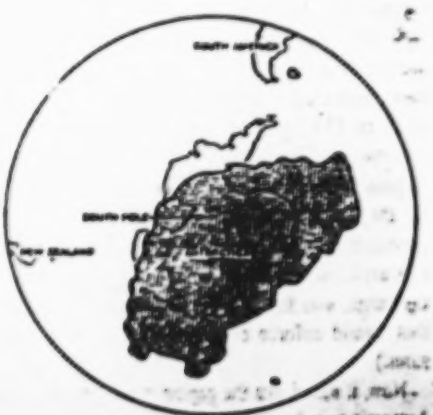
THINNING OF THE POLAR OZONE LAYER

ARCTIC

(From satellite image of March 1986)

ANTARCTIC

(From satellite image of October 1986)

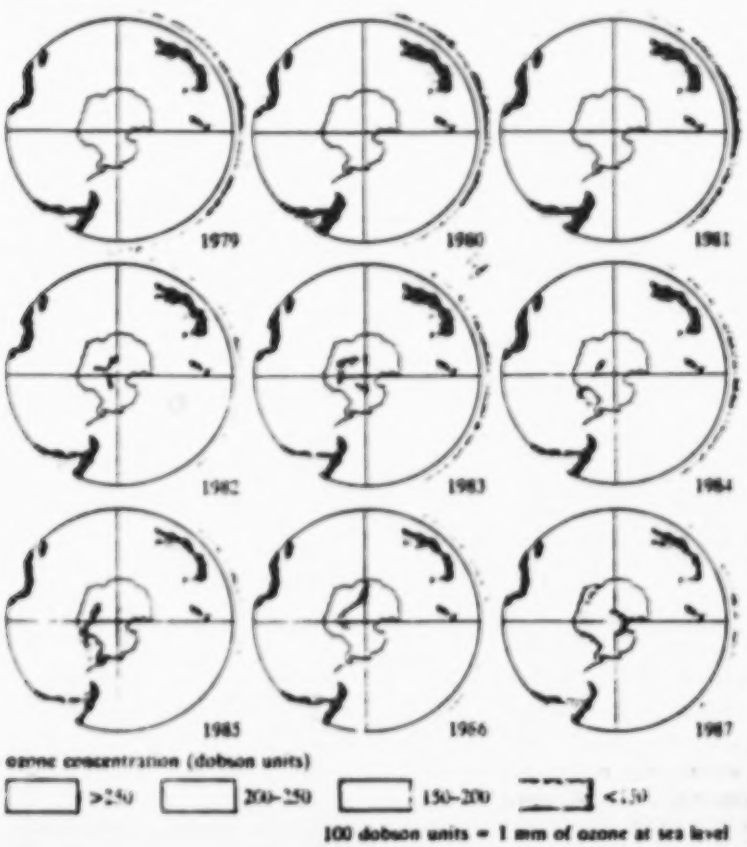


depleted areas

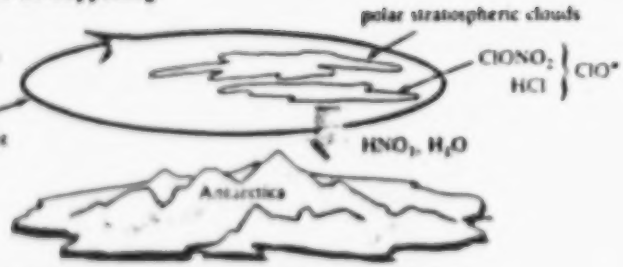
Like acid on lace, chlorine from man-made chemicals appears to be eating away the tenuous fabric of our protective ozone layer, at least over Antarctica in spring. That's the nearly inescapable conclusion from the most recent set of stratospheric measurements made last year by more than 150 scientists, who flew their most sophisticated instruments into the centre of the now-renowned 'ozone hole'.

Satellite measurements have shown a progressive decline in springtime ozone levels over Antarctica. How long can the decline continue?

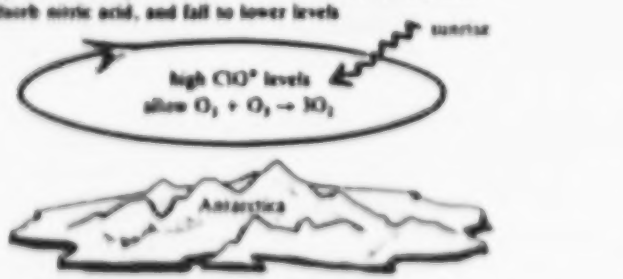
How the hole has grown



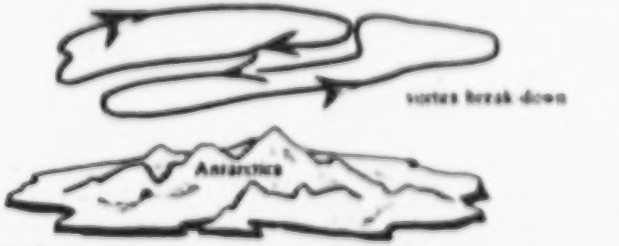
What seems to be happening



1. polar stratospheric clouds provide surfaces on which ClO^* can form they also adsorb nitric acid, and fall to lower levels



2. with nitrogen absent, ClO^* cannot revert to $ClONO_2$ sunlight and ClO^* catalyse the reaction of ozone to oxygen

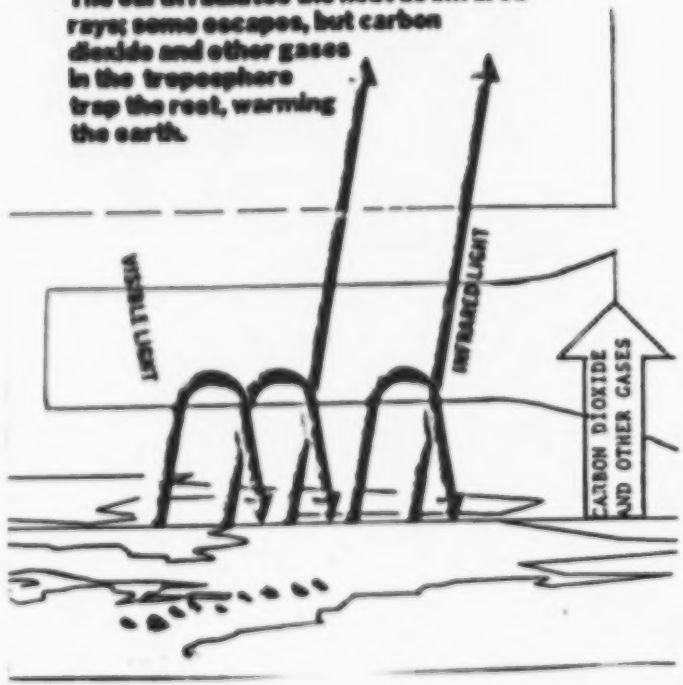


3. warming breaks up the polar vortex and the ozone hole is filled by air with normal ozone levels

53

GREENHOUSE EFFECT

THE PRESENT SITUATION
Visible light passes through the atmosphere to the earth's surface. The earth radiates the heat as infrared rays; some escapes, but carbon dioxide and other gases in the troposphere trap the rest, warming the earth.



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54

BEST COPY AVAILABLE

BF: 'Disasters.'

Human factor is the key to 'natural disasters'

IS the weather to blame for the famine that has turned much of central and eastern Africa into an international charity case? Does it matter that the drought that first hit the Sahel in 1969 never really went away? Would much of Africa be hungry even if the drought had not happened?

With perhaps 10 million people starving in Ethiopia alone after three failed crops, the questions may seem perverse. Obviously the farmers and herders would be better off with rain. Yet there is growing support for the argument that nature has become a scape-goat, and that humankind has only itself to blame for Africa's troubles.

By KELLY McPARLAND

Stratospheric ozone depletion is dramatically worse than we thought, according to a new report just issued by an international panel of more than one hundred scientists. The report, prepared under the auspices of the National Aeronautics and Space Administration (NASA), documents an unexpectedly rapid thinning of the stratospheric ozone shield all over the globe, with chlorofluorocarbons (CFCs) the likely cause. The alarming findings add new urgency to NRDC's drive for a total phase-out of CFCs and other ozone-depleting chemicals.

According to the scientists' report, even after natural factors are accounted for, satellite and ground-based monitors show ozone losses since 1969 as high as 3 percent over the heavily populated regions of North America and Europe and 5 percent over parts of the southern hemisphere. What's more, depletion is occurring at two to three times the rate predicted by computer models scientists have previously relied on.

After 4 years, Bhopal gas victims are still suffering

Nigeria has no mercy for the poison dumpers

THE DISCOVERY that more than 3,000 tonnes of Italian waste, including radioactive material, had been unloaded in Nigeria — apparently without government knowledge — has started an outcry against the increasing use of African countries as dumping grounds for industrial waste.

Companies under pressure from environmental groups in Europe and North America are turning to countries with less stringent regulations to get rid of toxic chemicals and dangerous waste.

NILE IN TROUBLE: 4000 YEARS ON

Even before the failure of the February-March rains in the Ethiopian Highlands there was acute anxiety in Egypt over the water levels in the Nile, and particularly in Lake Nasser, the reservoir behind the Aswan High Dam.

A decade of almost unrelieved drought in the Horn of Africa and the Sudan has reduced Lake Nasser's level to dangerously close to the 147m level – at which all electricity generation would have to cease. There are also serious implications for an agricultural programme which seeks to reclaim extensive areas of desert for cultivation.

DESTROY!

MAN looks to the forests and sees a bounty of trees -- CUT THEM DOWN!

MAN looks to the seas and discovers fishes galore -- CATCH THEM ALL!

MAN looks to the skies and witnesses the migration of countless numbers of birds -- SHOOT THEM ALL!

MAN looks to nature's mineral resources -- DIG THEM UP!

MAN looks to the mountains and hills -- TEAR THEM DOWN!

MAN looks to the rushing waters -- DAM THEM UP!

MAN looks at the wild flowers -- PLOW THEM UNDER!

Everywhere MAN looks he sees nature and has an urge to master it -- to destroy it!

Richard Peters 1977

SELECTED INTERNATIONAL ORGANIZATIONS

Center for Energy and Environmental Studies
Princeton, NJ

Environment Liaison Centre - International
Nairobi, Kenya

International Institute for Environment and Development
Washington, DC

International Union for Conservation of Nature/Natural Resources
Gland, Switzerland

Organization for Economic Cooperation and Development
Paris, France

The World Bank
Washington, DC

United Nations Department for International Economic/Social Affairs
New York, NY

United Nations Environment Programme
London, England

United Nations Food and Agriculture Organization
Rome, Italy

World Health Organization
New York, NY

World Resources Institute
Washington, DC

World Wildlife Fund
Washington, DC

HUMANS & ENVIRONMENT
LEARNING PROGRAM
(HELP)

Founded in 1981, GLOBAL HORIZONS is an educational collaborative for the design, delivery, and evaluation of K-12 instructional programs as well as critical thinking/decision making skills development modeling in global education, and international environmental education.

Clearinghouse activities include:

publication of a periodic newsletter, GlobeScope;

dissemination of relevant literature in the field;

original works published by the ERIC system and in national periodicals;

national conference paper presentations;

teacher inservice education 'how to do it' and informational workshops;

development of audiovisual and print instructional materials for classroom use and field-based studies;

the Humans/Environment Learning Program for continuous, integrated, and sequential instruction;

field testing OUR COMMON HOME: EARTH instructional units in K-12 classrooms;

application of the Proactive Action Model Cross-Culture Matrix to the study of diverse social groups.

NGO member of the Environment Liaison Centre, Nairobi KENYA

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